

This listing of claims will replace all prior versions of the claims in the application:

Listing of the Claims

1. (Cancelled)
2. (Previously Presented) A lip seal according to Claim 21 wherein, the shield is flexible so as to be deformable by the pressure of the fluid.
3. (Previously Presented) A lip seal according to Claim 21, comprising a first resilient member having said sealing lip and, adjacent to the first annular member, a second resilient member having said shield.
4. (Withdrawn) A lip seal according to Claim 3, wherein the first member comprises a further shield, the further shield being positioned on the sealed side of the lip.
5. (Withdrawn) A lip seal according to Claim 3, wherein the second member comprises a further lip, the further lip being positioned on a side of the shield remote from the first member.
6. (Original) A lip seal according to Claim 3, wherein the second member is formed from a reinforced elastomer.
7. (Original) A lip seal according to Claim 3, wherein the first and second members are annular.
8. (Previously Presented) A lip seal according to Claim 7, comprising an outer diameter body portion from which the lip and shield extend radially inwardly.

9. (Original) A lip seal according to Claim 8, wherein the body portion is adapted for retention within a housing of a bore for a shaft.
10. (Previously Presented) A lip seal according to Claim 21, wherein the passage is arranged to admit fluid between the shield and a grooved portion of the sealing lip.
11. (Previously Presented) A lip seal according to Claim 21, wherein the passage comprises at least one radially extending port through which the fluid is injected.
12. (Previously Presented) A lip seal according to Claim 7, wherein the passage is arranged to admit fluid between the shield and a grooved portion of the sealing lip, and extends between the first and second annular members.
13. (Previously Presented) A lip seal according to Claim 21, wherein the shield has a shield lip, the sealing and shield lips being normally closed together, and wherein the passage permits injection of fluid between the closed lips at sufficient pressure to cause the lips to open during use to allow the fluid to flow towards the end of the sealing lip.
14. (Withdrawn) A seal assembly comprising at least one lip seal according to Claim 1, disposed between relatively movable parts to define a sealed and an unsealed region.
15. (Withdrawn) A seal assembly according to Claim 14, wherein the relatively movable parts are substantially coaxial and are relatively movable by rotation and/or translation about or along said axis.
16. (Withdrawn) A seal assembly according to Claim 15, comprising a plurality of lip seals according to Claim 1 axially spaced along the axis of the relatively movable parts.

17 (Withdrawn) An element for use in a lip seal comprising:

a body portion;

a sealing lip depending from the body portion, the sealing lip being adapted for sealing engagement at an end thereof with a relatively movable surface to separate a sealed region from an unsealed region; and

a shield depending from the body portion, the shield being coextensive with the sealing lip and being disposed on the sealed side of the sealing lip, the element being configured to abut a further said element so that the shield provides, with the lip of the further element, a lip seal according to Claim 1.

18. (Withdrawn) Use of a pressurized flow of fluid directed along an external surface of a sealing lip according to Claim 1, towards an end thereof in sealing engagement with a relatively moving surface (as herein defined) to remove debris accumulated at the end of the sealing lip.

19. (Currently Amended) A method of protecting [[a]] an annular lip seal from contamination, the lip seal being exposed on one side to an abrasive environment, the lip seal comprising a radially extending resilient sealing lip adapted for sealing engagement at an end a radial extremity thereof with a relatively moving surface, the method comprising providing a radially extending shield ~~coextensive with~~ covering the sealing lip, on said one side except for at the lip end, the shield ~~and sealing lip being normally closed together proximate the end of the sealing lip~~ terminating radially short of the lip end, and injecting fluid under pressure into a space between the lip and the shield, the fluid exiting the space by passing between the lip end and an end of the shield and removing abrasive material accumulated at the lip end.

20. (Previously Presented) The method of Claim 19 wherein the shield restricts abrasive material from crossing the shield end into the space.

21. (Currently Amended) [[A]] An annular lip seal for use in an abrasive material environment, the lip seal having a radially extending sealing lip adapted for sealing engagement at a lip end thereof with a relatively movable surface to separate a sealed region from an unsealed region containing abrasive material, the sealing lip having a first side for facing towards the unsealed region and a second side for facing towards the sealed region, the lip seal having a radially extending shield ~~coextensive covering with~~ the sealing lip except for the lip end on the first side thereof to protect the sealing lip from the abrasive material and to define a space with the lip, the shield ~~and sealing lip being normally closed together and in contact proximate terminating radially short of the lip end,~~ and a passage permitting the injection under pressure of fluid into the space, ~~so as to cause the shield and sealing lip to open and permit the fluid [[to]] exiting~~ exit the space by passing between the lip end and the shield end into the unsealed region and remove abrasive material from the lip end.
22. (New) A lip seal according to claim 21 wherein the shield and the sealing lip are normally closed together and in contact proximate the lip end of the sealing lip, the pressure of fluid injected into space causing the shield and the sealing lip to open and permit the exit of the fluid.
23. (New) A lip seal according to claim 21 wherein the lip seal and the shield extend radially inward, the lip end being at a radially inner extremity of the lip seal.
24. (New) A method according to claim 19 wherein the shield and the sealing lip are normally closed together and in contact proximate the end of the sealing lip, the pressure of the fluid injected into the space causing the shield and sealing lip to open and permit the exit of the fluid.